Trans. Inst. Indian Geographers
Vol. 16. No. 1, Jan. 1994

GEOGRAPHY AND HEALTH CARE PLANNING : A CASE OF RURAL HIMACHAL PRADESH

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ABSTRACT : Geographical studies in health care incoroprate both theoretical and applied aspects that cover the locational dynamics and utilisation patterns of health care facilities. The resulting activity space and its spread on geographical space resulting in a 'container' subject system assumes a key importance in such studies. In health care planning usefulness of facilities is more important than the mere use value for which a holistic attitude towards need, demand and socio-cultural and economic behaviour becomes pertinent.

The paper offers a geopgraphical perspective to health care planning with an empirical analysis of rural Himachal Pradesh. It contends that inequalities with distribution of health care between rural and urban areas can only be removed if proper social and spatial planning is undertaken at micro and meso levels.

PLANNING FOR HEALTH CARE DELIVERY:

Planning for and monitoring the provision of health services which are accessible, equitable and effective in their distribution provide an area of geographical research that incorporates both theoretical and applied aspects. Comprehension of the movement and utilisation patterns of theconsumers and health care are important areas in such studies. The nature of distribution of health care, the locational dynamics of the facility points in relation to the users, the nature of physiography and climate and their effect on transport network and spatial accessibility, economic status and affordabillity of users, their social-cultural level and ability to perceive the need of health care and use it- all go to form the basis of this comprehension.

It is a well-known fact that health care facilities generally are not equitably distributed. It has been repeatedly demonstrated in many studies (Brown, 1974; Cole & Harrison, 1978; Knox, 1979; Eyles, 1982; haynes & Behtham, 1982) that relative distance acts as a significant factor in aggravating the situation of inequitable distribution. As distance is often seen to affect the utilisation pattern it, is appropriate to question the use of distance as a basis for locational policy. A significant imblaance between the common activity patterns and the locations of utilised health care facility points may indicate an inefficient distribution of health care resources. In health care planning there is a need to look beyond the simple 'use' of facilities to a consideration of their 'usefulness'. For planning purpose it is more important to evaluate how much the services offered by the facility contribute to the users' need and requirement rather than how much a facility is used. Hence the significance of conducting

surveys on the people's perception and attitude towards the utilitsed health care increases. Understanding of the users' attitude is usually given less priority. It has been now understood that this knowledge is extremely relevant in the context of planning as the suefulness of a service and its integration with the society can be assessed only through an understanding of its interactive surface.

Resource allocation on a territorial basis has its own area of significance and constitiutes a basic tenet of the location decision network. The critical question that is assoicated with it is that it should be made in a location where people not only need it but will be in a position to effectively use it. It is at the regional level that ultimately the availability and physical accessibility become closely interrelated with each other and the utilisation rate of health care services depends on the relative space surface. Within the hierarchical framework of a health care system of a region, variations will occur and at local level for lower order facilities non-spatial barrier like affordability or educational status will lose their importance and the precise location of facilities will have a bearing on the rate of actual utilisation.

The problem of location of facilities, their lack of accessibility and difficulties of ultimate use, therefore, may mean that majority of the people are undersupplied with basic health care. But uneven distribution of facilities and the consequent underutilisation by certain sections of the society is not only a problem of spatial proximity or distance. Resources may be concentrated in accordance with the general spatial - polarisation tendencies evident in many parts of the underdeveloped countries. One of the chief reasons for this is the reral-urban imbalance in most of these countries and a simultaneous concentration of health care resources in the towns with a gross neglect of the coutryside. In the present study both these features have surfaced and the interior villages with difficult terrain and high altitudinal locations hve been found to be the most affected ones. The distance-decay effect in terms of location of different levels of health care is amply evident from the analysis. Some of the problems that arise in attempting to correct these maldistribution of facilities are the same as anywhere else. Hospitals cannot be simply moved and a growth of resources is needed to implement any redistribution that is inevitably an expansion of the existing system. But the question of spatial reorganisation and relocation of facilitites has to be taken up as this becomes the major means of eradicating the ills of earlier ill-planned locations. Hence need arises to carefully assess the impact of the already available health care in a particular area and the degree of its interaction with the people of the catchment region.

Planning for heath care delivery thus an exercise of addressing the spatial and social aspects in a comprehensive manner. The circumstances and states in which utilisation is impaired or prevented are to be identified in order to suggest for an improved rate of utilisation. The present paper analyses the locational gaps and the utilisation constraints of the health care facilities in the above background, For the purpose of the analysis the health care facilities have been hierarchically ordered from level 1 to leve 17 facilities. On the basis of their efficiency and range (in descending order) the state of Himachal Pradesh has also been classified into 3 zons depending on altitude and climate.

1) The upper zone has an altitude of 2400 metres and above,

2) The mkddle zone has an altitude between 600 to 2400 metres and

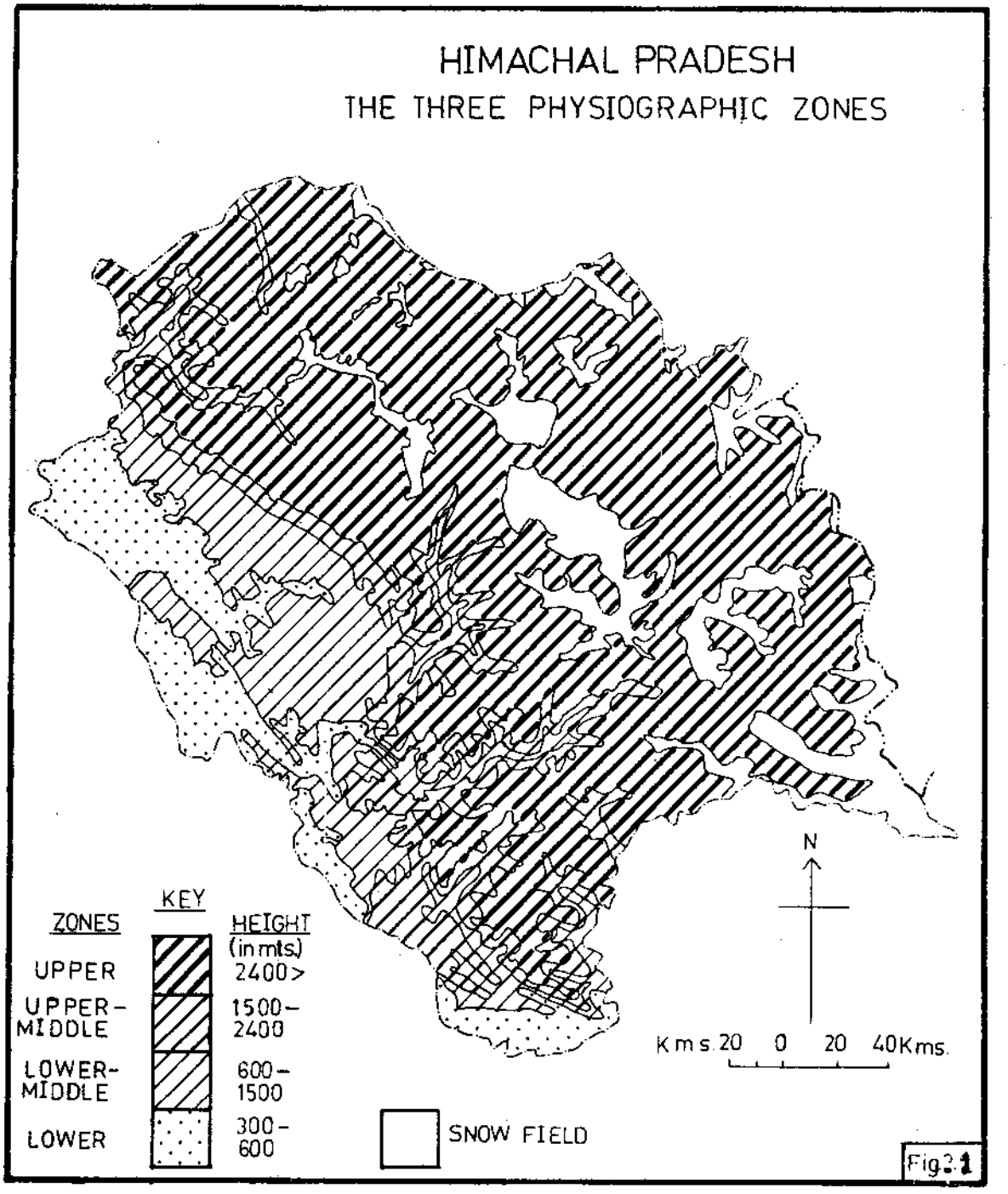

Fig. 1. Himachal Pradesh - The Three physiographic Zones.

3) The lower zone has an altitude between 300-600 metres. The middle zone is further subdivided into (a) upper-middle sub-zone with an altitude between 600-1500 metres and (b) lower-middle sub-zone with an altitude between 1500-2400 metres. The analysis is done with primary data collected from 437 households from 42 villages proportionately selected from all the three zones (Fig.1), (Table 1).

Table 1

DISTANCE OF SAMPLE VILLAGES FROM THE TEHSIL AND DISTRICT HEADQUARTERS

Zone	Village	Distance from the	Village tehsil headqurater (kms.)	Distance from the district headquarter (kms.)
1	2	3	4	5
Upper	Gorum	10 - 20	Gorum	10 - 20
	Rapring		Rapring	
- do -	Chembak		Chembak	
	Jahlma	20 - 30	Hahlma	20 - 25
	Phura		Phura	
	Kapahi	Dawara	10 - 20	
	Derru			
	Dodhu		Phozal	
Middle	Kalahod	< 10	Baragran	
	Barjwanu		Bari	
	Jugahan		Nagar	
	Chhatar		Kalahod	20 - 30
	Kaned		Barjwanu	
	Mahadev		Jugahan	
	Ghangal		Chhatar	
	Rajpura		Kaned	
	Ballu		Mahadev	
	Saliana		Ghangal	
	Bahru		Rajpura	
Middle	Dawara		Karjan	
	Gadiara		Kapahi	
	Gorehar	10 - 20	Derru	30 - 40
	Barohal		Dondhu	
	Dattal		Ballu	
	Andhreta		Saliana	
	Bahru			

1	2	3	4	5
Middle	Phozal Baragran Bari Nagar	20 - 30	Gadiara Andhreta	
Middle	Karjan	30 - 40	Gojra Sajloh Jagatsukh	
Middle	Gojra Sajloh Jagatsukh Manali	40 - 45	Manali Gorehar Barohal Dattal	40 - 45
Lower	Sanhet Baruhru Dhaliara Kohasan Nalsuha Nalsuha- Bharwarian Gunner	< 10	Sanhet Baruhru Dhaliara Kohasan Nalsuha Nalsuha- Bharwarian Gunner	50 - 60
Lower	Chamnal	10 -15	Chamnal	60 - 65

Source : Census of India, 1981, Series 7, Himachal Pradesh, Part XIII B, District Census Handbook Lanul- Spiti, Kullu, Mandi and Kangra.

Himachal Pradesh largely exhibits problems of spatial accessibility and concentration of higher order facilities in more accessible areas yet this has not overcome the constraints of utilisation of higher order facilities uniformly by all the sample villagers.

The following sections attempt to highlight the problems of location of health care facilities with respect to the sample villages and then to identify the gaps in the interactive surface and hence the constraints in the utilisation pattern. Sample villages are units of study for the locational gaps and households for the constraints in utilisation.

LOCATIONAL GAPS AND PROBLEMS OF ACCESSIBILITY : CONSTRAINTS IN THE UTILISATION OF HEALTH CARE:

It is a well-known fact that the nature of spatial distribution of health care facilities has a far-reaching impact on the utilisation of health care by the cross section of the society having an uneven distribution on space.

The following section attempts to bring out the relative location of the sample villages and the gap in the locational planning therein. As the health care system of the sample villages is divided into different levels of facilities with

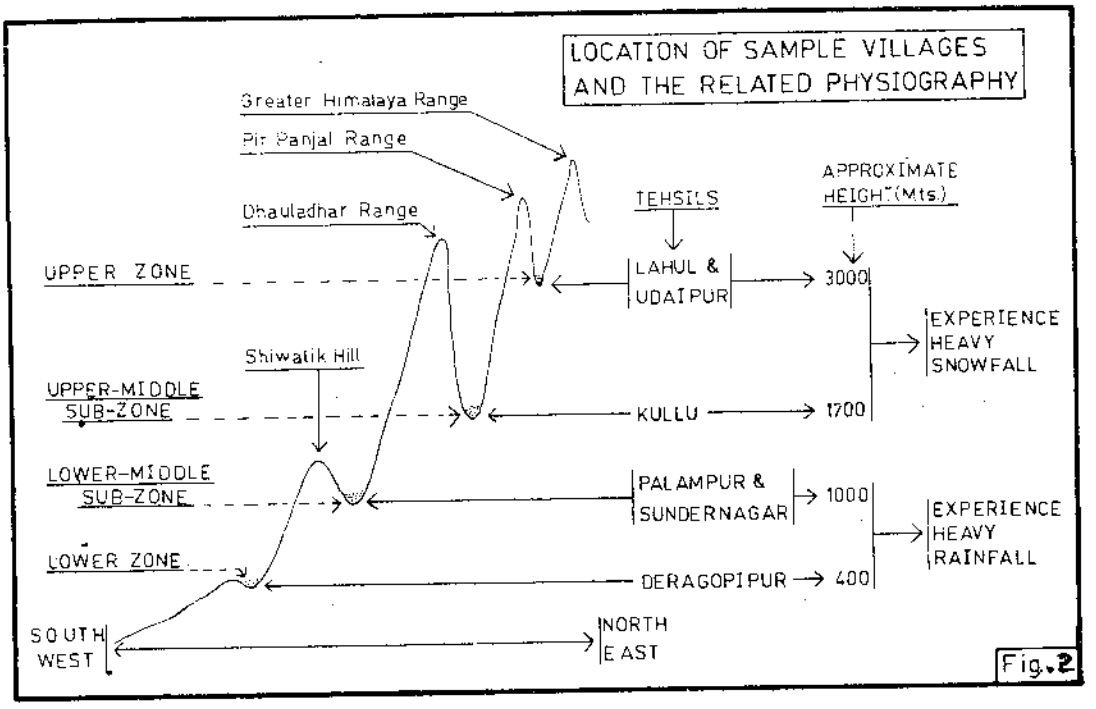

Fig. 2. Location of Sample Villages and the Related physiography.

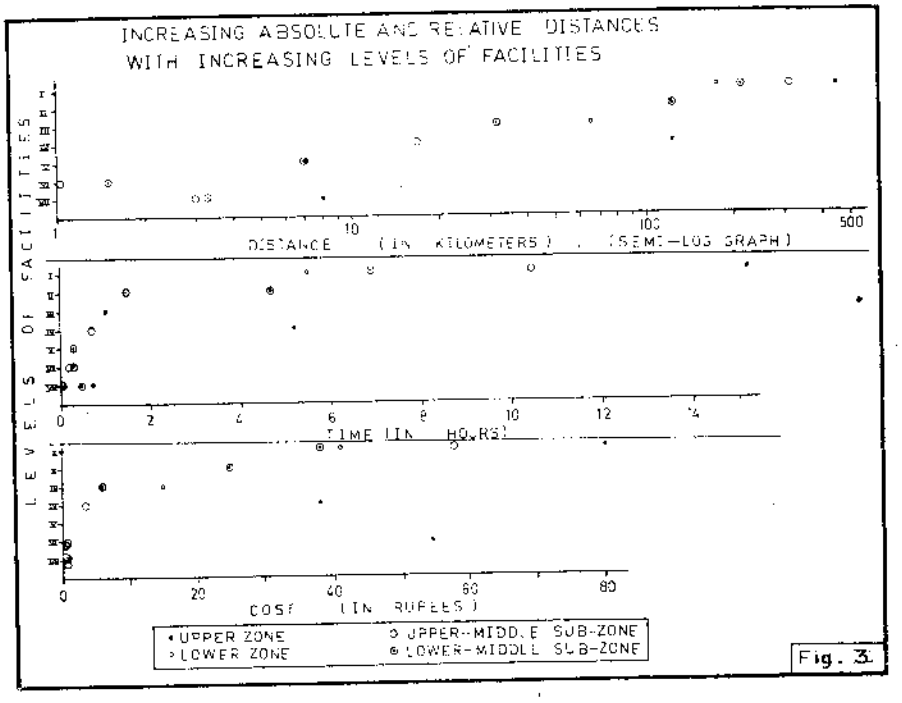

Fig. 3. Increasing Absolute and Relative Distances with increasing Levels of Facilities.

different utility and purpose in the process of cure, analysis of locational gap has been done on each level.

Only 3 villages of the total 42 sample villages have the basic facility of the Primary Health Centres located within the village boundary. All these 3 villages of Manali, Nagar and Jagatsukh are located in the upper-middle-sub-zone. Nagar and Jagatsukh P.H.Cs. especially the ones at Nagar have been found to be well equipped having the capacity to offer an effective basic service. Thus Nagar village followed by Jagatsukh can be said to be having the greatest advantage from among the total sample villages in having two well funtctioning P. H. Cs. within the village boundary. Twelve villages of the total 42 are located within 1-3 kilometers from P. H. Cs. and all of them are located in the middle zone. Three are in the upper-middle-sub-zone and 9 are in the lower-middle-sub-zone. Both in upper and lower zones there is not a single sample village that either has a P.H.C. located within the village boundary or within 1-3 kilometre distance. However, the remaining 6 villages of the middle zone are not located at a within distance 3 kilometres. 4 villages of the upper-middle-sub-zone are located far from P.H.Cs. These villages avail of the facility of Katrain Ayurvedic Hospital that is located at a distance of 6 kilometres. 3 villages from lower-middle-sub-zone are, however, located at a distance of 4-6 kilometers from the P.H.Cs, while 7 more are located between a distance group of 7-12 kilometers. It needs mention here that the only P.H.C. available to the 9 sample villages of Palampur tehsil of the lower-middle-sub-zone is the one at Panchrukhi village which has no facility whatsoever and where only 2 out of the total 437 households have been found to have visited. Thus, even though these 3 villages in the lower-middle-sub-zone have the availability of a P.H.C. in terms of distance; effectively, they do not enjoy this facility. Similarly all the 5 sample villages of the upper-zone that are located at the 4th distance group (i.e. 6.5-12 kilometers) from the Shansha P.H.C., also do not get any effective P.H.C. as the latter is not a well-run one and hence incapable of offering even basic medical facilities. Thus, in terms of distance and proper services, 14.28% of the total sample villages are located at a reasonable distance from fair to moderate level P.H.Cs. In terms of time distance, all the five villages in the upper zone, however, are within the range of 30 minutes incurring a cost of Re.1/- . 15 villages of the middle zone do not have to incur any transport cost although 2 more vullages are located within a time distance of 30 minutes. These 2 from Sundernagar tehsil and 4 villages from Palampur tehsil located at a time distance of 30 minutes to 1 hour have to incur a transport cost of Re. 1/-. However, 6 villages of upper-middle-sub-zone and 8 villages of the Sundernagar tehsil of lower-middle-sub-zone are actually better placed so far as accessibility to an effective P.H.C. is concerned. Thus 35.7% of the sample villages are located conveniently in terms of P.H.C. facility and another 35.7% are located far, but still at a managable distance to avail it. (Table 2).

It needs mention that private doctors are not at all a common medical care source in the rural Himachal Pradesh. Among the total sample villages only 6 villages in the middle zone are able to avail of this facility without incurring any cost as they are located within a distance of 3 kilometers. But no other village in the study area is availing of the facility of the private doctors. This brings out a very grave fact of paucity of doctors in the rural areas.

Considering the size of the population and staggering nature of the health problems, it is a crying need of the day that more medical personnel go to the rural areas. The 4.8% sample villagers of the present study area using this facility also do not constitute a cross section of the society as the charges of the private doctors are too high. The advantage of

Table 2

Location of Sample Villages in Different Distance Groups from Level VII Facility (Primary Health Centre)

	No. of villages with P.H.C.	1-2.99 kms	3-5.99 kms	6-11.99 kms	12-23.99 kms	24-47.99 kms	48-95.99 kms
Upper Zone				5			
Upper-Middle-Sub-Zone	3	3	3	1			
Lower-Middle-Sub-Zone		9	3	7			
Lower Zone	No P.H.C. facility available						
Total	3	12	6	13			

Source : Primary Data

spatial accessibility to this facility thus gets nullified by the constraint of social accessibility. In contrast, the level V facility of the tehsil hospitals is spatially accessible to a larger number of villages, although located only in the middle and lower zones. No tehsil hospital is accessible from the upper zone or upper-middle-sub-zone within a distance of even 25 kilometers, and they badly suffer from the dearth of these facilities (Table 3).

Table 3

Location of Sample Villages in Different Distance Groups from Level V Facility (Tehsil Hospital)

	Within 2.99 kms.	3 - 5.99 kms.	6 - 11.99 kms.	12 - 23.99 kms.	24 - 47.99 kms.	48 - 95.99 kms.
Upper Zone	No Tehsil Hospital facility available					
Upper-Middle-Sub-Zone	No Tehsil Hospital facility available					
Lower-Middle-Sub-Zone	7	3	5	4		
Lower Zone	2	2	4			
Total	9	5	9	4		

Source : Primary Data

Twentythree villages in the total sample are located within a distance of 12 kilometers from these facility points. All these villages are located in the lower-middle-sub-zone in both Sundernagar and Palampur tehsils and in lower zone. It can be said that these sample villages are effectively placed in an advantageous situation vis-a-vis the level V facility and brings out a balance in terms of the relative location of consumers and facilities. 46% of the villages, however, suffer from lack of accessibility to these facilities out of which 35.7% due to very large distance do not avail of this facility at all. In terms of time distance all these villages are located within a reasonable time distance of 1 hour but at times incurring a transport cost of even Rs. 4. While 7 villages do not incur any transport cost, 14 spend around Rs.2. Beyond this range 5 more villages do not enjoy any advantage of accessibility in terms of their location. Tehsil hospitals are middle order facilities for the villages of Himachal Pradesh which are quite commonly used by the sample households if these are available within a reasonable distance. This is the only health care facility that is available to the sample villages without much locational constraint. However, it has been already pointed out that this facility is not available at all for the 15 sample villages of the upper zone and upper-middle-sub-zone. The private hospital facility (levelIV) in the upper-middle-sub-zone is conveniently available to only 4 sample villages. The remaining 2 villages are located far although sample households have been found to visit it by bus. This is because no other moderate or higher level facility is located nearby. 4 villages from this sub-zone have been found to be similarly situated in terms of accessibility although they visit Kullu Government Hospital. Even accepting some locational constraints, 21% of the total sample villages are more or less accessible to this level of health care. In terms of time and cost distances, however, all the 10 sample villages of the upper-middle-sub-zone are located within a managable range (Table 4).

Table 4

Location of Sample Villages in Different Distance Groups from Level IV Facility (Manali Missionary Hospital and Kullu Government Hospital)

	Within 2.99 kms.	3 - 5.99 kms.	6 - 11.99 kms.	12 - 23.99 kms.	24 - 47.99 kms.	96 - 192 kms.
Upper Zone						5
Upper-Middle-Sub-Zone		1	3	5	1	
Lower-Middle-Sub-Zone	No Level IV Facility available					
Lower Zone	No Level IV Facility available					
Total		1	3	5	1	5

Source : Primary Data

As the level of facilities rises, the locational advantage of the sample villages gets reduced. So far we have seen that upto level IV, leaving out the upper zone and lower zone (only in case of P.H.C.), the middle zone sample villages are able to enjoy some comparable locational advantage. But beyond this level health care becomes actually scarce for the sample villages in general. Level III facilities of District hospitals of Mandi and Dharamsala are conveniently used by only the sample villagers of the lower-middle-sub-zone. villages of upper zone and upper-middle-sub-zone have not been found to visit these hospitals at all. The lower zone sample villages also are not conveniently located with respect to the district hospital of Dharamsala as the slope is steeper. In such cases villagers prefer to travel longer distance and avail of the highest level facility of Chandigarh. The spatial range of the health care facilities of different levels thus in this case also are showing their respective service areas which, however, in another way, indicates towards the increase of transport cost of rural clients that gets further aggravated by the large number of aged and dependent people among the patients. The seasonal nature of jobs and the practice of joint family ststem further restricts the per capita affordability of the patients that has a far reaching impact on the utilisation of higher order facilities when these are located far (Table 5).

Table 5

Location of Sample Villages in Different Distance Groups from Level III facility (District Hospital)

	Within 2.99 kms.	3 - 5.99 kms.	6 - 11.99 kms.	12 - 23.99 kms.	24 - 47.99 kms.	96 - 192 kms.
Upper Zone	No District Hospital Facility available					
Upper-Middle-Sub-Zone	No District Hospital Facility available					
Lower-Middle-Sub-Zone				2	17	
Lower Zone						8
Total				2	17	8

Source : Primary Data

The locational pattern of level II facilities in the available health care system indicates a thoroughly restricted utilisation pattern. Only the sample villages of Sundernagar tehsil in the lower-middle-sub-zone have been found to have interacted with facility which is located at a distance beyond 96 kilometers but within 300 kilometers.

Very few households, however, have been found to have actually utilised this facility. This is because, although distancewise this facility is located at a little closer than the leve

II facility of Chandigarh, the difference is not much compared to its range of services. Patients of acute case prefer to spend some more money and time in order to avail of the much higher level facility. Hence the constraint of distance to this facility not only reduces its utilisation rate but also puts an extra burden on the villagers in selecting level I facility in exchange of this one. If this facility would have been located closer and had offered more services, probably it would have helped the villagers to use it more and thus saved them from the long journey to Chandigarh. However, in terms of distance, no other sample village, besides these 10 have any interaction with level II facilities. Villages of Palampur tehsil of lower-middle-sub-zone are located beyond a distance of 225 kilometers from where again people prefer to go to Chandigarh. No other facility of this level is available to the villages of lower zone, upper-middle-sub-zone and upper-zone.

Location of the level I facility of Chandigarh at a very long distance from the sample villages and the considerable visits by the users from these villages at the same time simultaneously express a large threshold and range of goods of a central service as well as the compulsion of the villagers to use this facility even at the expense of very long journey and high cost. The reason is the absence of any comparable facility at a lesser distance. Thus although this facility is not located within an accessible distance from any sample village, not even from the closest ones from where its distance is more than 175 kilometers, this facility is used by almost 15.43% of the total sample households disributed in all the sample villages in the three physiographic zones. In no way it can be said that this facility is an available one. It is only a use by the force of circumstances. This also clearly expresses the economic implications of the friction of distance reinforcing the agglomeration effect in promoting distinct socio-economic movements and restricting the clientele. From all the sample villages it is only the households with higher affordability who have been able to use this facility. This locational constraint and its impact of restricted usage has been evident in case of all the facilities beyond level V that are distantly located, but in case of level I facility, this impact is the most acute. (Fig. 3).

The spatial accessibility pattern suggests the existance of large locational gaps and hence problems of reachability. These invariably reduce the utilisation rate of the facilities especially the higher order ones. This is a common phenomenon in many villages of India.

However, the locational constraint of the lower and middle order facilities in rural Himachal Pradesh is a matter of greater concern as this causes gap in the utilisation of health care at a basic level and hence causes damage to personal health and a proper attitude towards it.

PLANNING MEASURES FOR INTEGRATING HEALTH CARE SERVICES IN RURAL HIMACHAL PRADESH: A GEOGRAPHICAL PERSPECTIVE :

If the phrase 'Who should get What and Where' encapsulates the basic issues of planning for health care then the manner in which health care items are distributed assumes a critical importance. Because it largely determines the pattern of utilisation. Nevertheless, it also should be mentioned that the place is not the only determinant of the presence of opportunities or the lack of it. Nor does it uniformly and necessarily dominate all other factors. Rather in many cases spatial distributional pattern itself becomes an expression of how the economy works, how resources are allocated and how facilities are

used - within a specific social, economic, cultural and political fremework (Smith, 1979).

To overcome the problem of spatial distribution of facilities and allocation of resources at the same time is an important point in spatial planning. Geographically it can be translated into an idea that the just distribution of sources of need and want satisfaction would be the one that would create considerably equal condition of accessibility to different levels of health care for people irrespective of their respective location diffeentials. This recalls the useful contribution of Sen (1970) on the perspective of equitable distribution described respectively as 'universalisation', 'fairness' and 'impersonality'. 'Universalisation' requires making the same judgements irrespective of one's location; 'fairness' reflects an idea of making the level of the worst off as high as possible, and 'impersonality' invloves a state in which the individual has an equal probability of being in any position (Smith, 1977). In the case of planning for just distribution of health care inputs and spatial reorganisation of resources, the concepts of 'universalisation' and 'fairness' are mainly relevant. In reaching for some ideal institutional arrangement as the best prospect for justiceand optimum utilisation to be obtained through reorganisation, the ultimate criterion appears to be as to how broadly the real power to determine the allocation is actually spread over the population.

Despite the role of institution and a formal framework in initiating change and reorganisation, the need for corrective measures arising out of a thorough analysis of the distribution and utilisation of facilities in space do not diminish. As the choice of locating health care services does not get exercised in vacuum and broadly reflects the socio-spatial outcome of a system, the significance of the debate on possible planning measures to mitigate the locational constraints or utilisation gaps always remains vital.

It has been generally observed that spatial inequality of one kind or other exists in the case of distribution of health care services. Whether it is the distribution of hospitals or doctors, general physicians or primary health centres, some kind of an inequitable distribution has been found as a structural feature. In case of institutionalised health care, the location of units has aggravated the situation of conentration and hence inequality. Such geographical inequalities have been identified in all socio-political systems and at all geographical scales. Hence simultaneously with studying the spatial patterns that express and reveal inequality, it becomes equally important to indicate a condition and a spatial organisatioin which may allow the consumption of the facilities by the largest number of people. Especially for the rural areas where personal mobility condition is low due to physiographical and transport barrier and where the role of distance extremely dominant,a thought on spatial planning from all quarters - right from the plannersto the social workers and academic researchers - is more important. This is further true for the interior rural areas on the state of affairs of which it is quite difficult to develop a proper understanding. This brings us back to the need to highlight the problems of location and utilisation of health care in the present study and suggest some viable planning measures.

The major problems or constraints that have been identified in this case can be summed up as follows:-

(i) Physiographic difference, altitude variation and terrain conditions generate an acute lack of health care in interior and less accessible areas and express a distance decay condition.

(ii) The same conditions create a poverty of quality in the existing basic level of health care in interior areas.

(iii) Distance as an impediment acts vigorously and restricts the utilisation rate of the distantly located higher order facilities accentuated by time and cost factors.

(iv) Affordability status plays a major role in controlling the reachability of consumers to health care due to the impediments of distance.

(v) Proximity to towns expresses a better location vis-a-vis health care facility thus revealing a large scale rural-urban bias and a close association between hierarchy of settlements and that of health care, and

(vi) Lack of education associated with less exposure and insularity creates a lack of understanding and low perception level among the users about the need for health care.

However, these constraints do not have a uniform intensity in all the zones and differentials are vital for the formulation of planning measures as it makes planning place and people oriented. Moreover, in the present case planning needs to take into consideration the different levels of the health care units that with their varying threshold and range cannot have same locations.

Sample villages of Himachal Pradesh have been identified in different constraint groups. These groups have been decided on the basis of the gaps that exist in the locational characteristics of the villages as well as in the quality of the existing services. The diffeence between actual distance, time and cost distances and the expected distance time and cost distances to reach health facilities of different levels conveniently have been calculated and intensity groups have been identified. Similarly existing facilities have been rated according to their quality. In the case of P.H.C., the upper zone villages are suffering from an acute locational and distance gap. In the absence of any other facility nearby - a problem unique for these villages - the intensity of the problem of Primary Health Care facility increases here. These villages require more viable P.H.Cs. in closer locations. In the middle zone P.H.C. facilities vary between the sub-zones. Hence corrective measures need to be taken according to these locations. In the upper-middle-sub-zone six villages have moderate to fairly good P.H.C. facility in terms of location. One more P.H.C. in a viable location will solve the minor problem of the time distance here. The quality of the existing P.H.C. is fairly good and this quality needs to be maintained to help the villagers to continue to utilise a local facility. However, four villages of Baragran, Bari, Phozal and Dawara do not have any P.H.C. facility within a short distance for which these sample villagers use the facility at Katrain Ayurvedic Hospital. Even if P.H.Cs. cannot be located here, mobile doctors from the three P.H.Cs of Manali, Jagatsukh and Nagar can visit these villages. In the lower-middle-sub-zone in Sundernagar tehsil, locational gap is minor. It intensifies a little for the villages of Jugahan, Chhatar, Kaned and Mahadev and calls for an attention from planners. Mobile doctors can be a solution for these villages also. The lower-middle-sub-zone villages of Rajpura, Ballu, Saliana and Bahru in Palampur tehsil do not have any P.H.C. facilities nearby while the other five villages also due to very low level service at Panchrukhi P.H.C., effectively do not get this facility. P.H.Cs. are badly required in these villages along with all the lower zone villages where no P.H.C. is available within a short distance.

It is quite evident that P.H.C. facility that has been considered as a hallmark of the basic

health care for the rural people has not reached the 61.9% of the sample villages and minor locational gaps exist in the case of some 1% more. Hence majority of the villages can be said to be suffering from a lack of this basic service for which corrective measures need to be taken without delay.

So far as the private doctors are concerned, it has already been seen in the analysis that private doctors are very few in number in the sample villages. Six sample villages of the upper-middle-sub-zone and seven villages in the lower-middle-sub-zone and seven villages in the lower-middle-sub-zone enjoy this facility. There is a need to send more doctors to the villages in general as personal mobility of the villagers is usually low. To tackle this problem doctors from the P.H.Cs. can be made mobile by providing proper vehicles so that interior villages also do not suffer.

However, situations of the majority of the sample villages in terms of level V facility is different. Locational gaps do not exist in the lower-middle-sub-zone as well as in lower zone as these villages are located close to the tehsil headquarters where the hospitals are located. But this does not help the users very much as the quality of service is poor and most of the hospitals suffer from lack of equipments and staff. There is a need to improve the quality of the existing facilities in these areas. Simultaneously it should be mentioned that level V facility is totally absent in the upper zone and upper-middle-sub-zone sample villages revealing again the locational gaps of the villages located away from the district or tehsil headquarters. Similarly level IV facility is totally absent for the sample villagers of the lower-middle-sub-zone and lower zone. As the missionary activity had been more common in the tribal areas, Manali Missionary Hospital was started at a comparatively convenient location in the upper-middle-sub-3 one close to tribal areas. Over the years this has emerged as an efficient facility point but has remained elusive for the lower economic section of the users due to high charges. Hence besides Kullu Hospital (of the same level IV type) which is comparatively less effective in services and spatially accessible by only 50% of the sample villages of the upper-middle-sub-zone, lelvel IV facility is not uniformly available for the 50% of the villages of this sub-zone for its high cost. Although a few sample villagers from the upper zone have been found to have used this facility, overcoming a distance of 120 kilometers, it expresses a force of circumstances. Thus while 76% of the sample villages are not accessible to level IV facility the remaining 24% also do not enjoy it uniformly for their entire cross section.

It is evident by now that as the level of facilities increases, the locational gaps of the consumer villages also increase. In case of level III facility, the upper-zpne and upper-middle-sub-zone villages do not enjoy this facility at all. However, for the 10 villages of the Sundernager tehsil in the lower-middle-sub-zone, locational gap is not very acute and Mandi Hospital is at a manageable distance. But again for the villagers of the Palampur tehsil, this gap is more. For the lower zone villagers this gap increases further as Dharamsala Hosptial is located beyond a gorge on a steep slope. Thus level III facility is partly available to only 23.8% of the total sample villagers while with locational constraints by another 21%. The remaining villagers do not enjoy this facility at all.

Level II facility is availabe to only the villagers of the Sundernagar tehsil in the lower-middle-sub-zone but with acute locational constraint. Large gaps exist between the actual distance and expected distance. Other sample villagers

do not use the facility at all. Before the gaps in terms of level I facilities are discussed, an important point that need to be mentioned here is that there exists a huge gap in the quality of services between level II and level III facilities and that of level I facility. Therefore, from all the sample villages users have been found to travel exceptionally long distances to visit the level I facility at Chandigarh than to use levelII or III facilities and save time and cost. Of course Chandigarh is located in the Punjab plains for which road network in its immediate surrounding is smooth. Actually all the sample villages are located outside the normal catchment area of level I facility. Due to the very high quality of this facility, the expected distance has been kept as 120 kilometers and time distance 6 hours. This is a critical point where the users from distant villages may be able to visit the hospital and travel back to their homes in case no lodging facility is available for them at the facility location. All the sample villagers of the present study essentially do not enjoy any accessibility to this facility. It is only the absence of any near comparable services at lesser distance that compels them to travel exceptionally long distances and reach such a distant facility. In terms of level I facility, lack of accessibility and huge distance gap is huge for all the sample villages excepting for the ones of the Sundernagar tehsil of the lower-middle-sub-zone and those of the lower zone from where the route is over the plains and time distance is less (although the physical distance and cost distance are more than the expected). It is obvious tht as this facility is located outside the state of Himachal Pradesh, villages located away from the southern and south-western boundary of the state are at a further critical state. As this level of service is difficult to be located anywhere, there is a need to improve the service of existing level II and III facilities so that users are attracted there and hence are saved from long journey and associated cost.

The suggestions that have been formulated to mitigate the locational constraints intend to take into consideration the existing infrastructure and human resosurce base as both determine the efficacy of threshold and range of goods.

Population distributions, health care opportunityes and travel to health care points are not isolated aspects but are a part of a fabric of an interconnected network of locations, activities and social space. Instead of suggesting any particular prospective location points, zonal locations have therefore been suggested. Population is very low in the upper zone where connectivity indices are also miserably low. Population is actually considerably large in the middle zone especially in the lower-middle-sub-zone. Connectivity situation is also of a higher order in this zone especially near the capital town of Shimla and in the surrounding areas of the tourist centres. Population size in the lower zone is not higher than that of the middle zone but due to smaller size of administrative units (tehsils) population density is very high. However, connectivity situation is of a moderately fair order and due to proximity of the plains, journey is more convenient and road condition smoother. The same situation of populatiion and road network is reflected in the case of sample villages also. The proposal to establish more facilities for the middle zone and lower zone villages, therefore, can be said to be economically more viable as with need, demand also simultaneously is high with the percentage of a threshold population. However, this does not mean that facilities of health which are soical inputs should not reach the areas in the upper zone and some parts of upper-middle-sub-zone where need is greater than demand and the threshold population is

low. Question also should be raised about improving the quality of service in these interior areas along with the areas that are more accessible.

In developing countries the health care planners need also to know the prevalence of specific diseases and resulting morality and morbidity as well as the specific measures and facilities required to mitigate it. 'Resources' in these countries mean not only financial ones or even trained health personnel but also physical, managerial and administrative infrastructure. Whether or not these infrastructures exist will drastically alter the overall strategy and feasibility of implementation of any health care related activities (Walsh and Warren, 1982).

The problem of location and utilisation of the health care facilities faced by the sample villages of Himachal Pradesh, is mainly a problem of accessibility. Lack of spatial accessibility has aggravated the gap of social accessibility. This condition is of course more intense for the villagers with less exposure and understanding that creates an added problem if indecision. But the non-availability of proper facility is the most serious constraint in these villages that actually reflects the general situation of the rural areas of India and many other developing countries. If the ultimate objective of health care is to safeguard human life and society, the significance of inequality observed in the present case should not be ignored. However, huge cost and organisation are required to remove such anomalies. But that should not deter the concerned institutions to take up proper social and spatial planning in the interior rural areas. Such considerations in planning will require keeping both, people and places, in perspective.

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